

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/025612

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L21/00 H01L21/68 C23C14/56 C23C16/44

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L C23C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 109 202 A (AXCELIS TECH INC) 20 June 2001 (2001-06-20)	17-53
A	paragraph [0026] - paragraph [0030]; figures 4a,4b	1-13
X	US 4 278 380 A (GUARINO NICHOLAS) 14 July 1981 (1981-07-14)	17-53
A	column 2, line 31 - line 57; figure 2	1-13
X	US 5 445 491 A (HONDA TAKA AKI ET AL) 29 August 1995 (1995-08-29)	17-53
A	column 5, line 23 - column 6, line 37; figure 3	1-13
X	EP 0 441 646 A (CANON KK) 14 August 1991 (1991-08-14)	17-53
A	column 6, line 38 - line 57; figure 3	1-13

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

12 January 2005

Date of mailing of the international search report

27/04/2005

Name and mailing address of the ISA

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International application No.  
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## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13, 17-53

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13, 17-53

Perimeter Partition Valve  
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2. claims: 14-16 and 54

Vertical substrate placement actuator  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/025612

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1109202	A	20-06-2001	US 6347919 B1 EP 1109202 A2 JP 2001250856 A SG 106048 A1 TW 471017 B	19-02-2002 20-06-2001 14-09-2001 30-09-2004 01-01-2002
US 4278380	A	14-07-1981	NONE	
US 5445491	A	29-08-1995	JP 3238432 B2 JP 5055148 A	17-12-2001 05-03-1993
EP 0441646	A	14-08-1991	JP 3234979 A DE 69110698 D1 EP 0441646 A1 US 5566922 A	18-10-1991 03-08-1995 14-08-1991 22-10-1996